THE EFFECTS OF BOARD AND OWNERSHIP STRUCTURES ON THE PERFORMANCE OF PUBLICLY LISTED COMPANIES IN EGYPT

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ABSTRACT

This paper examines the association between some features of corporate governance mechanisms and performance in listed firms in Egypt, one of the emerging countries. Governance is measured as a multidimensional composite indicator consisting of the board characteristics and ownership structure. The performance is measured by a composite index which includes the ROA, ROE, and Tobin's Q. A sample of 240 observations from balanced panel data set of the 40 most active non-financial companies was collected from 2009 to 2014. The panel data regression was used for hypothesis testing. The findings showed that governance index has a high significant positive influence on firm performance index. Furthermore, institutional shareholding has the strongest impacts on firm performance index PERF and on all individual performance variables. Managerial ownership and ownership concentration have insignificant impact on accounting and market performance. The findings indicate a positive correlation between board size and performance. To the best of our knowledge, no study has yet measured governance and performance as composite indexes in non-financial companies in Egypt and/or the Middle Eastern countries.

Keywords: Corporate Governance, Ownership Structure, Board Structure, Firm Performance.

INTRODUCTION

Egypt has a fairly stable economy with an average growth rate of between 3% and 5% in the past quarter century. Egypt is the first Arab country to study and implement corporate governance in cooperation with the World Bank and the IMF in 2001 in line with international principles. Recently, there is a remarkable development in the field of corporate governance and the rules of disclosure in Egypt. Egyptian Code of Corporate Governance (ECCG) was issued in 2005 and 2011. The ECCG adopted, perhaps, the most prominent principles of the (OECD) issued in 1999, its amendments issued in 2004, and recent amendments which were made in 2015 contain the six basic principles that represent reference of general corporate governance in the world. Compliance with the ECCG is compulsory for Egyptian listed firms since the first issuance in 2005. The literature classifies corporate governance mechanisms into external and internal control mechanisms (Hussainey & Aljifri, 2012). External mechanisms include stock market, corporate control market and competition in product markets. The internal mechanisms are the board of directors, monitoring by block shareholders and managerial ownership. This paper tests the correlation between governance quality and performance using panel regression analysis. Corporate governance is measured in this study as a composite index that includes the board characteristics and ownership structure. The study measures performance through an integrated multi-level comprising ROA, ROE, and Tobin's Q. The composite index, PERF, indicates the overall corporate performance. Consistent with the previous studies, it is hypothesized that the firm performance has a positive association with the quality of governance. Rather than considering a single measure of governance, as did previous researches, this study

considers a composed index including six different governance measures with three performance dimensions.

Significance of the Study: While the performance-board and ownership structures relationship has been the theme of intensive research in developed economies, limited studies have been conducted in developing economies and few have been conducted in Egypt as one of the Middle East economies. To the best of our knowledge, no study has yet measured the governance and performance as composite indexes in non-financial companies in Egypt and/or the Middle Eastern countries.

Objective of the Study: The study aims to investigate the influence of board and ownership structures on firm performance of the Egyptian listed firms. Hence, this study pursues to answer the question of: What are the leading factors that are driving the performance of Egyptian listed companies?

Contribution of the Study: This study contributes to the literature and fills the existence gap by providing evidence of the effects of board and ownership structures on performance in Egypt. Board structure is considered as one of the internal governance mechanisms and the board effectiveness may be affected by the board characteristics. Therefore, the study may help companies make appropriate decisions concerning the board independence and placement of board members. The study also explores the impact of the ownership structure on the performance, so companies should take into account many factors when issuing shares. The results of this study are likely to provide significant implications for researchers, investors, policy makers, and corporate directors.

The rest of the paper is organized as follows. The next section discusses the related literature to develop the hypotheses. Followed by clarifying the research method, then, providing the empirical results. The conclusions, recommendations and limitations are in the last section.

LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

Previous research refers to characteristics and corporate governance mechanisms that are likely to drive corporate performance. Bhagat & Bolton, (2008); and Gompers et al. (2003) report that board and ownership characteristics can be an effective measure of corporate governance. This section reviews relevant literature that investigates the association between corporate performance and both the ownership and board structures for developing the hypotheses.

Board Structure and Firm Performance

The association between board structure and performance has been a continuing area of interest in previous studies. From an organizational point of view, the board may be considered as a team that combines work to achieve organizational goals. Board structure is represented by board size, CEO duality, and board composition.

Board Size

Board size is extensively studied in literature where the association between board size and firm performance is found inversely associated. Jensen (1993); and Cheng (2008) confirm a negative association between board size and company value, as benefits of monitoring from large board size face problems related to more asymmetric information and confusing communication issues. Larger board size may initiate difficulties in coordination and effectiveness in reaching

decisions (Jensen, 1993). On the contrary, Coles et al. (2008) found a positive correlation between the board size and corporate performance. Their findings agree with the resource dependence theory that larger board size may improve performance due to the difference in skills, knowledge and experience put forward in the board discussions. On the other hand, Makhlouf et al. (2018); and Sarpong-Danquah et al. (2018) show insignificant correlation between board size and company performance. Consistent with resource dependence theory, it is assumed that corporations with a large board of directors perform better than others.

CEO Duality

There are two conflicting interpretations about CEO/Chair duality depending on whether the company is served by strong leadership (supervisory theory), or through effective monitoring (agency theory). Jensen (1993); Rechner & Dalton (1991); Fama & Jensen (1983) support the separation of the CEO and the Chair as duality can reduce board's oversight on the corporation management, which leads to an increase in the agency costs. Hence, separating the roles of CEO and Chair would result in better corporate decisions and thus better performance. Leighton & Thain (1993) suggest that the board's effectiveness is mainly determined and depends on the impact of this position. If the positions of CEO and Chairman are occupied by one person, he or she emphasizes attaining the goals and giving strong leadership to the company. However CEO duality increases the chair authority and weakens the board's role in monitoring and appraising the managers' performance, as the director of the same company has close relations with the management (Coles & Hesterly, 2000). In accordance with organization theory, CEO duality leads to strong leadership. In contrast, according to agency theory, CEO duality induces the chair to reduce the effectiveness of the board's ability to monitor the CEO. As the board of directors that adopt CEO/Chair duality are less likely to oppose board decisions. It is considered that the separation of the positions of chairman and CEO, to be independent, declines the CEO's authority and increases the board's ability to perform its control role effectively (Boyd, 1995). This paper considers CEO/Chair duality as a proxy for the extent of the chairman's independence. Thus, this study adopts the literature viewpoint that emphasizes the positive association between the absence of CEO/Chair duality and corporate performance in Egypt.

Board Composition

The governance code states that at least one third of the board members have to be nonexecutive directors, and most of whom have to be independent. According to agency theory, absence of effective control systems is likely to induce managers to pursue opportunistic behavior to maximize their own benefit rather than maximize shareholder wealth. Early researchers (Mace, 1971; Norburn & Grinyer, 1974) debated that boards inspire little contribution to strategy as strategy is mainly implemented by the CEO. Moreover, dominance of executives within the board makes the board less effective in controlling the CEO because they are subject to hierarchical authority under the authority of the chief executive. The resource dependence theory argues that organizations control their environment by choosing resources to survive. The board of directors is therefore a link between the company and the necessary resources needed by the company to improve performance. Non-executive directors help to obtain the resources necessary for company success and manage environment contingency. Furthermore, Pearce & Zahra (1992) found that non-executive members bring different ideas when the company does not perform well. The independence of the board should provide more objective and comprehensive control, and thus affect the share of directors in corporate

performance. Sarpong-Danquah et al. (2018) also found that board independence has a significant positive effect on ROE and ROA in manufacturing companies in Ghana. Based on previous literature and the above arguments, this study assumes a positive association between board structure and corporate performance. Therefore, the first hypothesis is as follows:

Hypothesis 1: Board structure is positively associated with firm performance in Egypt.

Ownership Structure and Firm Performance

There is a related strand of the literature that considers the influence of ownership structure on performance. Banerji (2017) reviews the literature on corporate governance with a focus on ownership structure and corporate performance. The leading study carried out by Berle & Means (1932) debated that widespread ownership declines the actual ability of shareholders to monitor and control the company management. Levin (2004) debates that centralized ownership prevent managers from opposing the interests of shareholders because large investors have a stronger incentive to access information and control managers than small investors. Ownership structure is characterized by concentrated ownership, managerial ownership and institutional ownership.

Ownership Concentration

Ownership concentration reduces agency costs emerging from the separation of ownership and control, as large shareholders have strong reasons to monitor management which sequentially improve performance (Jensen & Meckling, 1976). Other discussions about the possibility of applying concentrated ownership of their control rights to obtain special benefits against small investors. As highly concentrated ownership is likely to change the agency problem from principal–agent conflict to principal–principal conflict (Bebchuk & Weisbach, 2010). Mostly, wherever external mechanisms of corporate governance are weak, the monitoring influence of ownership concentration is essential (Filatotchev et al., 2013). However, when a firm performs weakly, large shareholders may decrease their stake to reach more diversified individual portfolios (Yabei & Izumida, 2008). Under agency models, managers may have incentives to make decisions in their own interest, but not necessarily in the interests of shareholders. Accordingly, shareholders will take actions to alleviate agency costs and control the managers as such costs may reduce the firm value. The previous findings regarding the relationship of ownership concentration to corporate performance have mixed results. While, Pham et al. (2011) and Schultz et al. (2010) found an insignificant relationship for the Australian business environment, the relationship is significant for the Japanese business environment (Yabei & Izumida, 2008) and for the Singapore and Vietnamese business environment (Nguyen, et al., 2015). This paper expects a positive association between ownership concentration and firm performance in Egypt.

Managerial Ownership

Managerial ownership refers to the ownership stake owned by the top management. Jensen & Meckling (1976) indicate that management ownership may mitigate agency problems, since managers with a large share have more incentives to improve performance. Toal & Ruenzi (2014) studied the correlation between managerial ownership and stock market performance. They showed that managerial ownership can alleviate the negative impact of weak governance, because it reduces empire building and manages their companies more efficiently. Managerial

ownership can be used to induce managers to proceed in a way appropriate to the interests of shareholders (Grossman & Hart, 1983). Similarly, Kim & Lu (2011) show that the association between managerial ownership and firm value depends on the strength of external governance, as managerial ownership and external governance are alternatives to alleviate agency problems when ownership is low. While, Kim & Lu (2011); and Chiang (2005) found that increased managerial ownership improves corporate performance, the very high levels of share ownership resulted in poor corporate performance by discouraging the manager from taking risks, unless alleviated by strong external governance. As it appears in the prior literature, this paper expects a positive correlation between managerial ownership and the corporate performance in Egypt.

Institutional Ownership

Institutions in general acquire large blocks of a firm's shares and can exert significant impact on their management. Previous literature focused on the monitoring role of institutional ownership. Smith (1996) established a positive relationship between institutional ownership and company performance measures as he provides evidence compatible with the prediction that the monitoring by institutional shareholders makes managers concentrate on performance rather than opportunistic behavior or self-interest. However, the impact of institutional ownership on corporate decisions is determined by the proportion of ownership in the company. If institutional shareholders are high, hence, they have more incentive to monitor a corporate manager. Vice versa, when institutions hold reasonably few shares in a corporation, there is less incentive to monitor. Accordingly, institutional ownership with large stakes in large companies forces managers to provide better performance because large ownership leads to good corporate governance and effective legal protection. Yahaya & Lawal, (2018); and Lakshmi (2009) argued that institutional shareholders can decrease agency costs by the close monitoring of the performance and ensuring the shareholders' interests. This study expects a positive correlation between institutional ownership and the corporate performance, it is assumed that firms with high institutional ownership perform better than others.

Based on the conflicting estimates of the agency theory and the arguments cited above, this study suggests a positive association between ownership structure and performance. The second hypothesis is expressed as follows:

Hypothesis 2: Ownership structure is significantly associated with firm performance in Egypt.

Based on the review of previous studies on the association between board and ownership structures and firm performance, this study assumes that board characteristics and ownership structures have a positive impact on firm performance, therefore, this study can form the main hypothesis as follows:

Hypothesis 3: Board characteristics and ownership structure are significantly associated with firm performance in Egypt.

RESEARCH METHODOLOGY

Panel regression is used for data analysis as the study uses a cross-section of non-financial firms over a period of 2009-2014. The purpose of this study is to examine the effects of board and ownership structures, and firm specific characteristics on firm performance of the Egyptian listed corporations. The study employs a descriptive and correlational research design using panel data.

Table 1
DISTRIBUTION OF THE FIRMS SAMPLE

Sl. No.	Sector	Number of Companies
1.	Basic Resources	1
2.	Chemicals	3
3.	Construction and Materials	6
4.	Food & Beverage	2
5.	Healthcare and Pharmaceuticals	2
6.	Industrial Goods and Services and Automobiles	8
7.	Oil and Gas	1
8.	Personal and Household Products	4
9.	Real Estate	8
10.	Technology	1
11.	Telecommunications	3
12.	Travel and Leisure	1

Sample and Data Sources

The study utilizes balanced panel data of the 40 most active Egyptian listed corporations covering the various sectors delivered by the Disclosure Book issued by the Egyptian Exchange (EGX) in Cairo. The disclosure book provides consolidated information about the company, including background information, board of directors, shareholding structure, latest three-year financial figures and ratios, latest and considerable activities for each corporate. The data is for the period 2009-2014 which was the latest data available at the time of study. Data of financial firms are excluded because these firms are completely different from non-financial firms, and some features may not be comparable between financial and other firms. The firms sample is selected according to access to data. The final data contains 240 observations. The distribution of the firms sample is shown in Table 1.

Variables Definition

Performance variables

Three ratios to measure firm performance were calculated namely Return-On-Assets (ROA), Return On Equity (ROE), and Tobin's Q. While the ROE and ROA represent accounting performance measures, Tobin's Q is used to measure the market performance of firms. The composite variable, PERF, measures the overall firm performance. The multi predictive value for firm performance (PERF) was computed using standardized values as variables of performance then computing the target variable of PERF as a composite index. The study utilizes the data displayed in the financial reports to calculate ROA, ROE and Tobin's Q. Codes and measurements of the used variables are shown in Table 2.

Board and Ownership Structure Variables

The variables of board structure are the total number of directors (BSIZE), the percentage of non-executive directors on the board (BINDEP), and absence of CEO/Chair Duality. The multi predictive value for board structure (BOARD) was achieved using standardized values as variables of board structure then computing the target variable of BOARD as a composite index.

The measures of ownership structure are the ratio of shares held by large block (OWCO), the fraction owned by institutional shareholders including the Egyptian government (INST) and

the fraction owned by the top management (ManOwn). Multi predictive value for ownership structure (OWNER) was achieved using standardized values as variables of ownership structures, then computing the target variable of OWNER as composite index. The study focuses on influencing the percentage of their holdings instead of the dollar value ownership. Some other factors may also affect a company's performance, to be considered, this study presents some control variables. Kayhan & Titman (2007) showed a negative association between performance and the debt to equity ratio. In addition, the literature shows a negative correlation between firm size and performance, as large firms are likely to finance their activities by debt and do not have to choose the accounting method to increase earnings (Dey et al., 2008). The literature argues that the Capital Adequacy variable (CA) has a positive influence on performance (Goddard et al., 2004).

Table 2
DESCRIPTION OF VARIABLES

Variable	Explanation	Composite index		Measurement
Independent Variables: Board and Ownership Structure Variables				
BSIZE	Board Size	OWNER	GOV	Number of directors.
BINDEP	Board Independence			Ratio of non-executive directors on the board.
Dual	Absence of CEO/Chair Duality			A dummy variable equals 0 if the positions of CEO and the Chairman filled by the same person and 1 otherwise.
INST	Institutional Ownership	BOARD		Ratio of shares owned by institutional shareholders, including the Egyptian government.
OWCO	Ownership Concentration			Ratio of shares owned by the largest shareholders.
ManOwn	Managerial Ownership			Ratio of the company's shares owned by the top managers.
Dependent Variables: Performance Variables				
ROA	Return on Assets	PERF		Net income/sales.
ROE	Return on Equity			net profit after tax/equity.
Tobin's Q	Market Performance			The market value of shares and book value of debt divided by the book value of total assets.
Control variables				
CA	Capital Adequacy			Book value of equity to total assets ratios.
LEV	Leverage			Total debt /total assets.
DBEQ	Debt to Equity			Total debt/equity.
SIZE	Firm Size			Total Assets.

Model Specification

This study estimates three models and employs a fixed effect and random effect panel regression model for the estimation of parameters. The results of Hausman test are to determine the efficiency of mentioned methods. Model (1) is formed to test the effect of board structure BOARD on corporate performance. The variable BOARD is a composite index. Control variables are included to determine their influence on corporate performance.

$$PERF_{it}\ (performance)=\beta_{0i}+\beta_1 BOARD_{it}+\beta_2 CA_{it}+\beta_3 LEV_{it}+\beta_4 DBEQ_{it}+\beta_5 SIZE_{it}+e_{jt} \quad (1)$$

Similarly, model (2) tests the impact of ownership structure OWNER on performance.

$$PERF_{it}\ (performance)=\beta_{0i}+\beta_1 OWNER_{it}+\beta_2 CA_{it}+\beta_3 LEV_{it}+\beta_4 DBEQ_{it}+\beta_5 SIZE_{it}+e_{jt} \quad (2)$$

Model (3) is to test the impact of board and ownership structures on performance. The variable GOV is a multidimensional composite index resulting from factor analysis of the variables of board and ownership structures.

$$PERF_{it}\ (performance)=\beta_{0i}+\beta_1 GOV_{it}+\beta_2 CA_{it}+\beta_3 LEV_{it}+\beta_4 DBEQ_{it}+\beta_5 SIZE_{it}+e_{jt} \quad (3)$$

Coefficient β1 is the coefficient appraisal of the board and ownership structures composite index, β2 to β5 are the coefficient appraisal of the control variables. e_{jt}=error term. In addition, the influence of the board and ownership structures variables on the performance composite index is tested in a separate model as shown in model (3a).

Furthermore, models 3 (b-d) are developed to examine the impact of individual firm governance components on the performance variables: ROA, ROE, and Tobin's Q.

$$PERF_{it}\ (performance)=\beta_{0i}+\beta_1 BSIZE_{it}+\beta_2 BINDEP_{it}+\beta_3 Dual_{it}+\beta_4 OWCO_{it}+\beta_5 ManOwn_{it}+\beta_6 INST_{it}+\beta_7 CA_{it}+\beta_8 LEV_{it}+\beta_9 DBEQ_{it}+\beta_{10} SIZE_{it}+e_{jt}\ldots\ldots \quad (Model\ 3a)$$

$$ROA_{it}\ (performance)=\beta_{0i}+\beta_1 BSIZE_{it}+\beta_2 BINDEP_{it}+\beta_3 Dual_{it}+\beta_4 OWCO_{it}+\beta_5 ManOwn_{it}+\beta_6 INST_{it}+\beta_7 CA_{it}+\beta_8 LEV_{it}+\beta_9 DBEQ_{it}+\beta_{10} SIZE_{it}+e_{jt}\ \ldots\ (Model\ 3b)$$

$$ROE_{it}\ (performance)=\beta_{0i}+\beta_1 BSIZE_{it}+\beta_2 BINDEP_{it}+\beta_3 Dual_{it}+\beta_4 OWCO_{it}+\beta_5 ManOwn_{it}+\beta_6 INST_{it}+\beta_7 CA_{it}+\beta_8 LEV_{it}+\beta_9 DBEQ_{it}+\beta_{10} SIZE_{it}+e_{jt}\ \ldots.\ (Model\ 3c)$$

$$Tobin's\ Q_{it}\ (performance)=\beta_{0i}+\beta_1 BSIZE_{it}+\beta_2 BINDEP_{it}+\beta_3 Dual_{it}+\beta_4 OWCO_{it}+\beta_5 ManOwn_{it}+\beta_6 INST_{it}+\beta_7 CA_{it}+\beta_8 LEV_{it}+\beta_9 DBEQ_{it}+\beta_{10} SIZE_{it}+e_{jt}\ \ldots.\ (Model\ 3d)$$

EMPIRICAL RESULTS

Descriptive Statistics

Table 3 presents descriptive statistics for the variables in the data sample of this study. It shows the mean GOV as a composite index of board and ownership structures variables. The mean for board size is 10.72 with a maximum of 21 members and minimum of 5 members. The mean values of the separation of CEO/Chair positions is 0.23, and non–executive members represent 83% of the board. On the ownership side, the institutional stakeholders span from 0% to 92% with a mean of 21% and a standard deviation of 28%. It appears that Egyptian listed companies have reasonable proportion of institutional shareholders. The average of largest block-holder ownership ratio spans from 1% to 92% with a mean of 38%. The mean of top management ownership ratio is 7% with range from 0% to 66% and a standard deviation of 14%. Regarding performance, PERF spans from -2% to 83% with a mean of 23% and a standard deviation of 22%. According to the accounting performance, ROA ranges from -10% to 34% with a mean of 7% and ROE ranges from -11% to 68% with a mean of 14%. Furthermore, Tobin's Q spans from 0% to 5% with a mean of 1%. Taking the average, it seems that accounting performance indicators are higher than market performance indicator in Egyptian firms. Regarding control variables, the table shows that firm size ranges from 48 million to about 59

billion with a mean of 8 billion Egyptian pounds. Furthermore, governed firms have smaller sizes, higher capital adequacy, and lower leverage.

Table 3
DESCRIPTIVE STATISTICS (n=240)

	Mean	Median	Std. Deviation	Min	Max
PERF	0.23	0.20	0.22	-0.20	0.83
GOV	0	-0.34	2.33	-3.81	4.30
BOARD	0	0.17	1.91	-3.98	3.18
OWNER	0	0.12	1.56	-3.71	3.35
BSIZE	10.72	11.00	3.74	5	21
BINDEP	0.83	0.89	0.13	0.44	1
Dual	0.23	0.00	0.42	0	1
OWCO	0.38	0.33	0.23	0.00	0.92
ManOwn	0.07	0.00	0.14	0.00	0.66
INST	0.21	0.06	0.28	0.00	0.92
ROA	0.07	0.06	0.08	-0.10	0.34
ROE	0.14	0.12	0.15	-0.11	0.68
Tobin's Q	0.01	0.01	0.01	0.00	0.05
DBEQ	0.21	0.00	0.60	0.00	4.00
CA	0.01	0.01	0.00	0.00	0.04
SIZE	8049	2053	14454	48	59300
LEV	0.14	0.08	0.15	0	0.67

Correlation

Table 4 shows the correlation matrix between the variables. Pearson correlation coefficients are above and the p-values are below. PERF is positively correlated with BOARD, OWNER and GOV that initially support the study hypotheses. PERF is significantly negatively correlated with Dual, DBEQ, SIZE, and LEV. It is significantly positively correlated with BSIZE, BINDEP and INST. The table shows that, PERF is not correlated with OWCO, ManOwn, and CA. It also presents the correlation between performance variables (ROA, ROE, and Tobin's Q) and the correlation between governance variables (BSIZE, BINDEP, Dual, OWCO, ManOwn, and INST). The table shows that, institutional ownership is correlated with leverage and debt to equity.

Regression Analysis and Discussion

The results of panel regression of the study models are presented in Tables 5 & 6. The findings showed a positive significant association between the board as a composed index BOARD and performance PERF at 1% level. The results support the first hypothesis (*H1*). The ex–post analysis demonstrates a positive significant association between board size BSIZE and performance as a composed index PERF and measures of ROA and ROE at of 1% level. The findings support the argument that large board size would improve the effectiveness of firm performance as the board diversity decreases the associated uncertainties. Moreover, large board size would improve the board decisions (Makhlouf et al., 2018; and Abobakr, 2017). Larger boards are positively significantly associated with PERF, ROA and ROE as a greater variety of mental knowledge improves the decision-making and enhances the performance. Nevertheless, the findings contradict the results of Sarpong-Danquah et al. (2018) showing insignificant correlation between board size and company performance. The results are consistent with resource dependence theory, it is assumed that corporations with a large board of directors perform better than others.

Table 4
PEARSON CORRELATION MATRIX (n=240)

	1	2	3	4	5	6	7	8	
1. PERF	1								
2. GOV	0.275** 0	1							
3. BOARD	0.215** 0.001	0.729** 0	1						
4. OWNER	0.165*	0.658** 0	-0.035 0.586	1					
5. ROA	0.901** 0	0.344** 0	0.361** 0	0.106 0.102	1				
6. ROE	0.969** 0	0.213** 0.001	0.117 0.071	0.183** 0.004	0.769** 0	1			
7. Tobin's Q	0.647** 0	0.123 0.058	0.038 0.563	0.138* 0.033	0.497** 0	0.643** 0	1		
8. BSize	0.415** 0	0.515** 0	0.585** 0	0.109 0.093	0.540** 0	0.313** 0	0.147* 0.023	1	
9. BINDEP	0.150* 0.02	0.536** 0	0.800** 0	-0.097 0.132	0.280** 0	0.067 0.305	0.001 0.992	0.363** 0	
10. Dual	-0.174** 0.007	0.279** 0	0.439** 0	-0.076 0.241	-0.163* 0.012	-0.167** 0.01	-0.079 0.225	-0.296** 0	
11. OWCO	-0.046 0.478	0.300** 0	-0.255** 0	0.717** 0	-0.124 0.056	0.002 0.981	0.004 0.954	-0.217** 0.001	
12. ManOwn	-0.084 0.196	0.294** 0	0.019 0.771	0.409** 0	-0.097 0.134	-0.066 0.31	-0.102 0.117	0.017 0.794	
13. INST	0.403** 0	0.498** 0	0.177** 0.006	0.532** 0	0.396** 0	0.368** 0	0.327** 0	0.380** 0	
14. DBEQ	-0.12 0.063	-0.191** 0.003	-0.096 0.137	-0.174** 0.007	-0.189** 0.003	-0.075 0.247	0.016 0.802	-0.157* 0.015	
15. CA	-0.029 0.653	0.037 0.573	0.127* 0.05	-0.086 0.183	0.127* 0.05	-0.107 0.098	-0.198** 0.002	0.124 0.056	
16. Size	-0.136* 0.035	-0.149* 0.021	-0.253** 0	0.06 0.352	-0.157* 0.015	-0.111 0.085	-0.099 0.125	-0.146* 0.024	
17. LEV	-0.217** 0.001	-0.025 0.698	-0.103 0.11	0.077 0.234	-0.308** 0	-0.145* 0.025	-0.136* 0.035	-0.198** 0.002	
	9	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
9. BINDEP	1								
10. Dual	0.096 0.136	1							
11. OWCO	-0.333** 0	0.086 0.186	1						
12. ManOwn	-0.009 0.893	0.026 0.687	-0.008 0.907	1					
13. INST	0.181** 0.005	-0.238** 0	0.197** 0.002	-0.315** 0	1				
14. DBEQ	-0.084 0.196	0.065 0.312	0.106 0.103	-0.178** 0.006	-0.215** 0.001	1			
15. CA	0.196** 0.002	-0.088 0.173	-0.205** 0.001	0.009 0.893	0.053 0.412	-0.257** 0	1		
16. Size	-0.210** 0.001	-0.105 0.105	0.296** 0	-0.087 0.178	-0.108 0.094	0.536** 0	-0.181** 0.005	1	
17. LEV	-0.098 0.132	0.107 0.099	0.179** 0.005	0.307** 0	-0.359** 0	0.572** 0	-0.273** 0	0.319** 0	1

Note: Significant coefficients at the 5%, and 10% levels are noted by ** and *, respectively.

Moreover, model 2 is significant at 1% level. The results showed a positive significant correlation between ownership structure as a composed index OWNER and performance PERF at of 1% level. Therefore the second hypothesis (*H2*) is accepted. The ex–post analysis demonstrates a highly positive significant correlation between institutional ownership INST and performance as a composed index PERF and measures of ROA, ROE and Tobin's Q at of 1% level. The findings support the argument that institutional shareholders can decrease agency costs by the close monitoring of the performance and ensuring the shareholders' interests (Yahaya & Lawal, 2018; and Lakshmi, 2009). However, the result is in contrast with Nazir & Malhotra (2017) who found a poor positive relationship between board size and firm value in India. In Egypt, institutional shareholders have more incentive to monitor corporate managers to enhance corporate performance. Furthermore, model 3, the model is highly significant at 1%. The results found a positive significant correlation between board and ownership structures as a composed index GOV and performance PERF at of 1% level. Accordingly, *H3* is accepted.

Table 5
GOVERNANCE–PERFORMANCE RELATION: MULTIDIMENSIONAL ANALYSIS

PERF	Pred. Sign	Model 1		Model 2		Model 3	
		t	P-Value	t	P-Value	t	P-Value
BOARD	+	2.84	0.005				
OWNER	+			2.61	0.010		
GOV	+					3.86	0.000
DBEQ	-	-0.63	0.532	0.58	0.566	0.12	0.903
CA	+	-1.88	0.061	-1.28	0.203	-1.58	0.115
SIZE	-	-1.00	0.320	-1.91	0.057	-1.41	0.159
LEV	-	-0.05	0.957	-0.88	0.378	-0.39	0.700
_cons		1.91	0.057	1.85	0.065	1.77	0.078
Model Summary							
F		11.26		21.25		20.91	
P-Value		0.000		0.000		0.000	

Table 6
GOVERNANCE–PERFORMANCE RELATION: Ex–POST ANALYSIS

	Pred. Sign	Model 3 (a)		Model 3 (b)		Model 3 (c)		Model 3 (d)	
		PERF		ROA		ROE		Tobin's Q	
		t	P-value	t	P-value	t	P-value	t	P-value
BSIZE	+	4.142	0.000	6.389	0.000	2.756	0.006	0.381	.704
BINDEP	+	-0.145	0.885	1.179	0.240	-0.762	0.447	-1.205	0.229
Dual	+	-0.495	0.621	0.167	0.868	-0.814	0.416	-0.093	0.926
OWCO	+	-0.342	0.732	-0.166	0.868	-0.352	0.725	-1.149	0.252
ManOwn	+	0.598	0.551	0.074	0.941	0.768	0.443	1.310	0.192
INST	+	3.649	0.000	2.486	0.014	3.828	0.000	4.560	0.000
DBEQ	-	0.896	0.371	0.330	0.742	0.996	0.320	2.671	0.008
CA	+	-1.841	0.067	0.159	0.874	-2.588	0.010	-3.740	0.000
SIZE	-	-1.166	0.245	-0.270	0.787	-1.460	0.146	-2.100	0.037
LEV	-	-1.370	0.172	-2.096	0.037	-0.810	0.419	-2.026	0.044
Model Summary									
F		18.53		39.82		14.81		10.94	
P-Value		0.000		0.000		0.000		0.000	

Regarding the control variables, the results showed a negative association between firm size and Tobin's Q at 1% level. This result is consistent with the prediction that a large firm size

declines the market performance of Egyptian firms. The results showed that leverage is negatively associated with return on equity and Tobin's Q at 5% level. Capital Adequacy CA is negatively associated with ROE and Tobin's Q at 1% level and PERF at 10% level. Demonstrating that the well capitalized firms decline the return on equity and market performance. This result is inconsistent with the prediction and many preceding studies such as Abobakr (2017); and Goddard et al. (2004).

The general conclusion from results of Models 3 (b) through (d) is that institutional ownership has the strongest effects on the three performance dimensions: ROA, ROE and Tobin's Q. While board size positively affects ROA and ROE, it does not affect Tobin's Q. Debt to total assets is significant in explaining the variations in ROA and Tobin's Q. Firm size and debt to equity explain variations in Tobin's Q. Capital adequacy has a strong influence on ROE and Tobin's Q.

DISCUSSION AND CONCLUSION

The results show that corporate governance quality is significantly positively associated with firm performance composite index. This result is in agreement with the findings of Elbannan & Elbannan (2014); Coles et al. (2008) and Bhagat & Bolton (2008). However, this finding is against the results of Gherghina et al. (2014). The results show also that both the board structure index and ownership structure index have a significant positive impact on firm performance. These results support the stewardship and agency theories.

The impact of the governance components on performance components is tested independently. Indication has shown that performance is significantly affected by some corporate governance variables. Regarding board structure variables, board size has a positive significant determinant for PERF, ROA, and ROE; however, it is an insignificant determinant for Tobin's Q. It is compatible with the resource dependence theory as larger board sizes may improve performance due to the difference in skills, knowledge and experience put forward in the board discussions. The result showed insignificant association between presence of outsiders and corporate performance this finding agrees with Adams & Mehran (2012). This contrasts with the views that emphasize the need for independent board directors, as diverse expertise and qualifications help to reduce agency costs and improve performance. This could be due to the absence of effective application of appropriate corporate governance laws in listed companies in Egypt (El-Habashy, 2018). The results show an insignificant relationship between CEO/Chair duality and firm performance, meaning that duality does not have any effect on all performance dimensions. This result may be due to different legal, institutional and cultural aspects working in Egypt.

Regarding ownership structure variables, evidence has shown that institutional ownership is strongly associated with corporate performance index PERF and on all performance components. This finding supports the theoretical expectation and is compatible with the findings of many studies (Jiraporn et al., 2012: Lakshmi, 2009; and Farinos et al., 2007). Ownership concentration has an insignificant negative influence on firm performance index PERF and on all performance components. This finding is against the view that the ownership concentration leads to greater effectiveness and enhances the control and governance (Shehzad et al., 2010; and Iannotta et al., 2007). Moreover, managerial shareholders have an insignificant positive impact on firm performance index PERF and on all performance components. This result is against the view that an increase in managerial ownership leads to improved corporate performance (Toal & Ruenzi, 2014). It can be interpreted that very high levels of share ownership resulted in discouraging the manager from taking risks, unless alleviated by strong external governance.

Moreover, empirical evidence showed that capital adequacy, firm size, and leverage have negative significant determinants for firm performance. The results of firm size and leverage are compatible with that of Kayhan &Titman (2007) Al-Najjar & Hussainey, 2009. Where large Egyptian companies are likely to choose accounting methods to reduce reported earnings (Dey et al., 2008). Nevertheless, the result of capital adequacy is against the findings of Naceur & Kandil (2009), which indicate that a high ratio of capital to assets enhances the corporate performance.

Research Implications and Recommendations

The results showed the different relationship with what was obtained in developed Western countries, which are consistent with the contingency theory. As what is applicable to organize a company or decision-making in developed Western countries might not be appropriate in developing countries. The results of this study have significant implications for researchers, policy makers, and corporate directors. Efforts to enhance corporate governance should focus on institutional ownership as they are positively related to accounting performance and market performance. Proponents of the board independence must be careful about the insignificant negative association between the board independence and the firm performance. Thus, if the purpose of the board independence is to enhance performance, these efforts may be deceptive. Policy makers must compel companies to comply with disclosure rules. Further research will therefore be undertaken considering more governance quality variables and using larger samples and longer time periods.

Research Limitations

This study has limitations as the research uses data from only the 40 most active non-financial firms listed on the Egyptian Stock Exchange. However, this index is the preferred index for investors in Egypt. Moreover, the data is for the period 2009-2014 which was the latest data available at the time of the study. Data of financial firms are excluded as these companies are totally different from non-financial companies, and some attributes may not be comparable between financial and other companies.

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